

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

In the Claims:

Claim 1 (currently amended): A method of searching a file access system for a requested file, comprising:

establishing a field in a directory i-node memory structure for files corresponding to a directory cache hash table, said field containing a pointer to said directory cache hash table;

allocating memory for a directory cache and buffer cache hash table having an array of hash buckets which point to a list of files which may correspond to a specific i-node, the directory cache hash table storing directory layouts;

searching the directory cache hash table for a requested file by hashing the file i-node to a specific bucket which contains a list of files that may correspond to the requested file i-node; and

if the bucket contains a matching file name, pointing to where the name of the requested file is stored.

Claim 2 (currently amended): A method of searching a file access system according to claim 1, further comprising conventionally searching file structures when the file name in the directory cache hash table is not found.

Claim 3 (currently amended): A method of searching a file access system according to claim 1, wherein the step of allocating memory for the directory cache hash table includes selecting directories to cache using at least one of the number of files in a directory and the frequency of use.

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Claim 4 (currently amended): A method of accessing files in a file access system, comprising:

establishing a field in a directory i-node memory structure for files corresponding to a directory cache hash table, said field containing a pointer to said directory cache hash table;

reading a directory into buffer cache, the directory having a storage device representation;

converting the directory from the storage device representation to a faster representation, the faster representation representing a layout of the directory with an array of hash buckets which point to a list of files which may correspond to a specific i-node; and

searching the faster representation for a requested file by hashing the file i-node to a specific bucket which contains a list of files that may correspond to the requested file i-node;

wherein the storage device representation is maintained for backwards compatibility with pre-existing and older file access systems.

Claim 5 (currently amended): A method of accessing files in a file access system, comprising:

establishing a field in a directory i-node memory structure for files corresponding to a directory cache hash table, said field containing a pointer to said directory cache hash table;

reading a directory into buffer cache, the directory having a storage device representation;

converting the directory to a faster representation, the faster representation including a pointer from a the directory i-node to an associated hash table, the hash table containing a layout

of the directory with an array of hash buckets which point to a list of files which may correspond to a specific i-node; and

searching the faster representation for a requested file;
wherein the storage device representation is maintained for backwards compatibility with pre-existing file access systems.

Claim 6 (original): A method of accessing files according to claim 5, further comprising hashing selected directories into a hash table format.

Claim 7 (original): A method of accessing files according to claim 5, further comprising hashing selected directories into a hash table format according to a size of the directory.

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Claim 8 (original): A method of accessing files according to claim 5, further comprising hashing selected directories into a hash table format according to frequency of access.

Claim 9 (original): A method of accessing files according to claim 5, further comprising hashing selected directories into a hash table format according to a user selected criteria.

Claim 10 (currently amended): A method of searching a file access system for a requested file, comprising:

establishing a field in a directory i-node memory structure for files corresponding to a directory cache hash table, said field containing a pointer to said directory cache hash table;

allocating a hash table, the hash table having hash buckets which point to a list of files which may correspond to a specific i-node;

hashing a directory into the hash table;

establishing a pointer for the directory, the pointer pointing from a directory i-node to the hash table; and

searching the hash buckets for a requested file.

Claim 11 (original): A method of searching a file access system according to claim 10, wherein the step of hashing a directory includes hashing selected directories into a hash table format according to a size of the directory.

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Claim 12 (original): A method of searching a file access system according to claim 10, wherein the step of hashing a directory includes hashing selected directories into a hash table format according to frequency of access.

Claim 13 (original): A method of searching a file access system according to claim 10, further comprising linking hash buckets to offsets where a name of the requested file is stored.

Claim 14 (currently amended): A computer server system, comprising:
an outer cabinet housing memory, an array of storage devices, at least one power supply providing electrical power to the computer server system, and

at least one processor allocating memory for buffer cache and directory cache, the processor converting directories from a storage device layout to a faster representation which includes an array of hash buckets which point to a list of files which may correspond to a specific

i-node, the faster representation including a pointer from a directory i-node memory structure to an associated hash table.

Claim 15 (currently amended): A network storage system, comprising:

an outer cabinet housing memory, an array of storage devices, at least one power supply providing electrical power to the network storage system, and

at least one processor allocating memory for buffer cache and directory cache, the processor converting directories from a storage device layout to a faster representation which includes an array of hash buckets which point to a list of files which may correspond to a specific i-node, the faster representation including a pointer from a directory i-node memory structure to an associated hash table.